TRAINING GAMES BASED LEARNING: UNIVERSITY CASE IN COLOMBIA

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Abstract

New generations require a more dynamic learning model, so that higher education institutions have begun to articulate their pedagogical teaching tools different areas of knowledge. The aim of this paper is to design a game to support management subjects that include within its micro-curriculum themed marketing audit, using an exploratory and descriptive methodology, based on game-based learning. This requires a review of the literature was performed and conducted a pilot undergraduate students test a Colombian university. The results show that the game design must use an interactive strategy, which in turn keep certain kind of complexity and competitiveness,

Keywords: Learning strategies, educational game, marketing, management audit.

İntroduction

Increasingly, the environment demands the Higher Education Institutions (IES) professional training to help adapt to new social and working environment requirements (Montes and Suarez, 2016) from competitions (Braghirolli, Ribeiro, Weise and Pizzolato , 2016) and innovative skills like critical thinking, creativity, collaboration and communication (Qian and Clark, 2016), enabling them to solve problems and make decisions in different fields. These skills are sometimes difficult to promote in the classroom because they employ traditional techniques and strategies that do not allow us to observe the effectiveness of decisions to make, nor recognize the reaction of these possible errors or changes in the environment (Brennan and Vos , 2013)

As an alternative learning allows students to replicate the environment of a particular industry and provide experience in decision-making, master classes have relied on game-based learning, involving the development of cognitive, affective, emotional and behavioral student, stimulating their imagination, which gives greater abstraction of reality (Dávila and Velásquez, 2007), since the games provide problem-based complex holistic environments where scenarios that allow you to experience the responsibility to take recreate different roles under the same pressures facing reality (Brennan and Vos, 2013), on par to offer its participants a collaborative, challenging and feedback environment (Qian and Clark, 2016).

Among the fields of action, the marketing has not been without support their master classes based games (Vos, 2015), applying them on issues such as learning: hiring and training salespeople, customer analysis, advertising and marketing research, production (McRaith and Goeldner, 1962), strategies marketing mix (Forrester, 1959; March 1962; Shycon and Maffei, 1960), a study of consumer behavior (Titus and Petroshius, 1993), among others; however, between marketing variables found in the literature, little emphasis has been made in designing games to promote learning of the audit to the marketing process, despite being the measuring results (in financial terms) of actions in this area (Radulescu and Cetina, 2012).

Considering the above, the objective of this work was to design the game MKnow Audit management to complement learning marketing audit; in the first part of a review article on the topics to be treated is present, then the methodology proposed by Van der Zee, Holkenborg and Robinson (2012) exposed; Prieto Lopez, Medina-Medina, Paderewski and Gutierrez-Vela (2017) Xu, Buhalis and Weber (2017), that having a structure together make up the methodological model to be implemented in game design; Finally, the findings of the pilot test are shown, which validated the game complements the learning process of marketing audit.

1.1 Game-Based Learning

The literature shows that the history of business games dating back nearly 5,000 years to the development of games and wargames (Faria, Hutchinson, Wellington and Gold, 2009), but in the nineteenth century where they take greater force when applied in the preparation of the Second World War, and serving as an input for the development of tools such as flight simulators and training staff (Lane, 1995). With technological advances, in 1956 the American Management Association created the first management game called Top Management Decision Simulation, and have since developed games as learning tools in both academia and business (Mahboubian, 2010).

In educational terms, the games are described as an environment where both the content and the game itself facilitate and improve the acquisition of knowledge and skills (Waiyakoon, Khlaisang and Koraneekij, 2015) for solving problems and challenges, from learning focused on achieving (Qian and Clark, 2016), where students learn in a fun, interesting and stimulating way, (Brennan and Vos, 2013), to create, understand and retain knowledge, to the point where they can learn on their same (Waiyakoon et al., 2015) and collaboratively (Osés, Duarte and Pinto, 2016).

Now in the field of study of an administrative nature, games are defined as a means of training for educational purposes, which makes an abstraction of the business environment, where the game participants must make decisions regarding the management of the company or specific areas (Lewis and Maylor, 2007).

1.2 Games in marketing management

Educators who work issues marketers have implemented the use of management games in their classrooms as an alternative learning where the student participates in its construction (You and Brennan, 2010), and to strengthen while learning in their own marketing mix (Cronin and McCarthy, 2012), as variables: distribution (Shycon and Maffei, 1960), prices (March, 1962) and advertising (Forrester, 1959); or own marketing trends, such as social marketing (Russell-Bennett, Leo, Rundle-Thiele and Drennan, 2016), viral marketing (Payne, Campbell, Bal and Piercy, 2011), brand management (Craciun and Corrigan, 2009), ethical marketing, consumer behavior (Titus and Petroshius, 1993) and the environment (Wiese and Sherman, 2010), among other variables (McRaith and Goeldner, 1962).

1.3 Marketing audit

The marketing audit is considered an evaluation tool to measure the value, risk and effectiveness of the effort of the activities of the marketing process (Radulescu and Cetina, 2012), and intended to diagnose, predict and make recommendations (mokwa, 1986) on the effects such efforts and implement new actions to improve results through different action alternatives (Brownlie, 1993; Kotler, Gregor and Rodgers, 1989); for which are defined as instruments measuring different indicators of marketing related to market share, perceived quality, loyalty, profitability relative price and the value at the time of the current client and potential (Barwise and Farley, 2004), customer satisfaction, number of complaints,

To achieve its goal, this tool has four fundamental characteristics: comprehensive, independent, systematic and regular. Compressive is said to be because it must cover the environment of the organization, its objectives, policies, strategies; independent because it must be implemented by an external agent to the marketing process to ensure subjectivity in the analysis (Brownlie, 1993); It must be systematic since meets an ordered sequence of steps that support the diagnosis; and it must be periodically because it is performed regularly (Kotler et al., 1989).

II. Method

This article is part of a pedagogical practice applied to a selected group of students from a convenience sample, where the inclusion criteria of the participants was that they were pursuing a course that had in its microcurrículo the issue of marketing audit. Therefore, the type of investigation is descriptive and qualitative, the results were interpreted by descriptive analysis while conceptualizing and categorizing observed and their consistency with the object of study.

For game design they took into account different methodological proposals of some authors to design a management game. For example, van der Zee et al. (2012) suggest that designing a game it is necessary to define the objectives and parameters, develop the model of the game, decide on the representation of the game, build and modify it, and finally design the operating manual. For its part Prieto et al. (2017) propose the design of an educational video game that contains the design challenges of the game with their skills and objectives, design

the type of game, the initial design of the story and the main characters. Once defined the general idea, the authors propose to refine the game by designing chapters and scenes, redefine the educational and emotional component, adjust the game and finally decide whether the game is individual or in groups. Furthermore, Xu et al. (2017) suggest identify the reasons for use of the game, to discover what aspects motivate play, identify the elements needed to design and perform a test to make adjustments.

Overall, the revised methodologies propose defining the objectives, the game model (profile players, roles, structure and instructions), set the aspects to be evaluated, conduct a pilot test to make adjustments to the initial design and finally be evaluated by players to determine if the goals are achieved. According to these elements, a method scheme for game design would MKnow Audit embodied as shown in Figure 1.

Fuente: Elaboración propia.

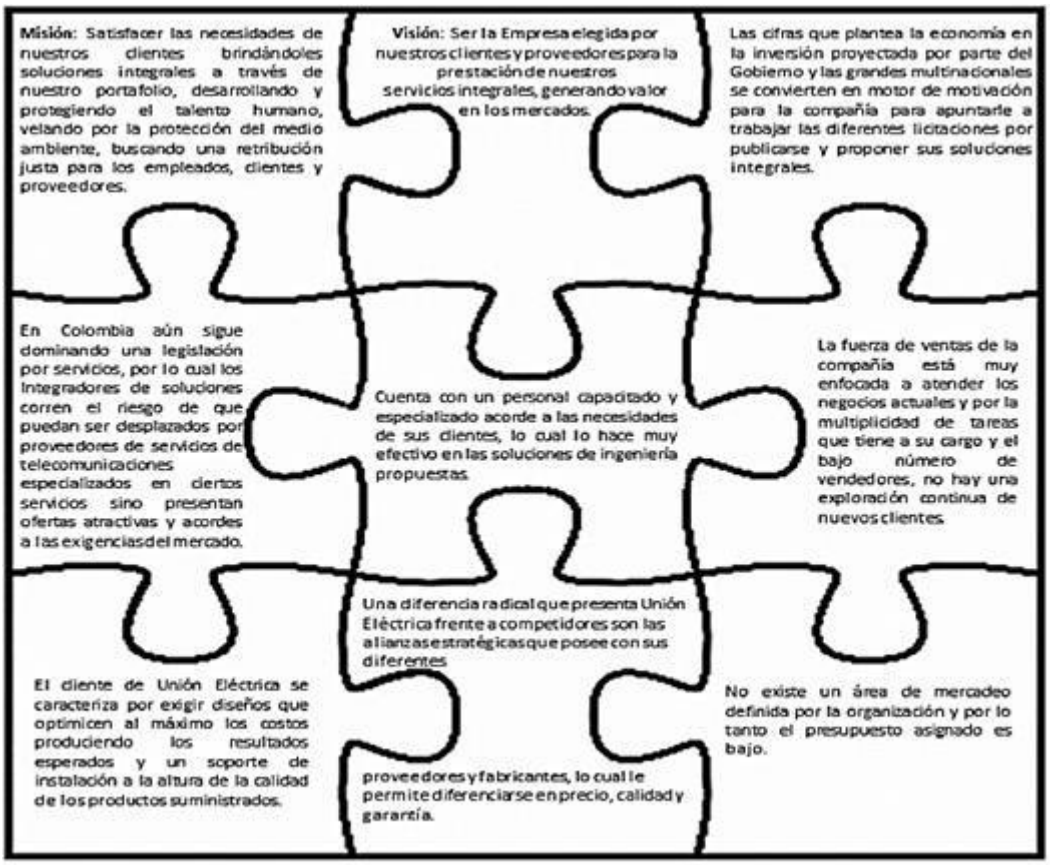
Figure 1. Methodology for game design MKnow Audit

III. results

Game development management Audit Mknow was divided into five stages:

1. Definition of the subject and objectives of the game. The theme of the game is the marketing audit and purpose is to strengthen the qualities of marketing audit: systematic, independent, regular and comprehensive. The game allows us to understand the structure of the marketing audit by linking marketing objectives with indicators so that at the end the participants propose a scenario of action.

2. Game design and instructions. Players must be students of subjects that include within their microcurrículo the issue of marketing audit, they will receive a written document with the background of the company you apply the audit. Once the document read each team will receive 18 pieces, which in 12 minutes will build two puzzles, one with an optimal scenario and one with a likely scenario, so checking feature comprehensive marketing audit. Players only have access to a key on the back image as to whether armed or optimal scenario likely. Then,



Fuente: Elaboración propia.

Figure 2. puzzle game with optimal solution Mknow Audit

Subsequently, each group will be given a card game containing three goals marketingidentificados with the letter O, with indicators marked with the letter I and the results marked with the letter R (see Figure 3), in order to each group arme in 10 minutes three card games with a combination of O, I and R; However, in the group of letters a game that is inconsistent with the context of the company is presented. As in the puzzle, an optimal scenario is presented and another probable.

Fuente: Elaboración propia.

Figure 3. Example of a card game game Mknow Audit

Once organized the cards players must enter in an answer sheet names, the key to the puzzle and series of numbers that armed with the three sets of letters, numbers appear at the top of each card. The data will be recorded in an Excel file to be compared with the answers given by the experts. The winning team is the one that is closer to the optimal scenario proposed by experts, at the end of the game.

3. Results and success metrics. Once you are entering the results an automatic score is assigned to each team in accordance with the following criteria: the puzzle has a weight of 60% in the rating: is assigned 5 to putting it together optimal setting and 4 to putting it together or probable scenario combined chips; card games have a 40% weight and calculated an average rating of each card game: a game of armed cards right has a rating of 5 with two correct chip has a rating of 3.3 and card game use a letter from the wrong combination is 0.

4. pilot. The pilot test 24 students (divided into three groups) of undergraduate marketing applied sixth semester at the University of Medellín (Colombia).

5. Evaluation of the game. Of the three teams formed, only one armed optimal puzzle, which has a neutral language does not pose courses of action and analysis is framed in the context of the assessed organization. For its part, teams that put together the puzzle likely kept the logical order of the size of the audit. The main difficulties arose in card games where each team presented only one successful game cards, participants expressed confusion by not carefully read the scope of objectives to determine which indicators and more consistent results are saved. When you were justified successful combinations of letters by the coordinator of the game,

As part of the methodology, students evaluated the game on an additional sheet of answers, answering questions concerning the design, complexity, learning, strategies and aspects of game improvement. These results were grouped into two categories: one related to the features of the game and another with learning through play. In the first category participants suggest that the afterimage of the puzzle must present high difficulty for players to focus on putting together the side containing the logical order of the results of an audit of marketing.

While the results of each team players are reported in Excel it is necessary for the game to continue, so it is proposed to report on a sheet of additional answers a scenario of action for the audited company according to the information analyzed. The proposed by teams of players action scenario compared to the one proposed by an expert group stage, enabling the closure of analysis and scores tiebreaker to determine the winning team.

In the second category of results from an open question, participants learned manifest aspects in the game. Results in two lines of learning, conditions implied regarding an audit and another with specific aspects of marketing audit are identified. In the first line highlights that there are many ways to obtain solutions (17%), the importance of keeping a logical order (13%) and to associate and connect information (13%) (see Table I), skills that students

should strengthen in the process of learning for skills development it proposed training program. On the other hand, the second line emphasizes that the audit supports an extensive marketing organizations (8%) evaluation,

Table I. learned aspects in the game

Calificación	Línea	Frec. %
Hay muchos caminos para solucionar las cosas	Auditoría	17
Llevar un orden lógico	Auditoría	13
Asociar y conectar información	Auditoría	13
La evaluación extensa que se le puede hacer a una empresa	Auditoría de marketing	8
Elementos para una auditoría	Auditoría de marketing	8
La forma como se presentan los resultados y la evaluación de una auditoría	Auditoría de marketing	8
A leer las instrucciones	Auditoría	8
Mejorar la habilidad de análisis	Auditoría	8
Secuencia, interpretación y análisis	Auditoría	8
Analizar el entorno	Auditoría de marketing	4
Analizar desde la perspectiva de los objetivos	Auditoría de marketing	4
		100

Meanwhile, Table II evidence the strategies that students considered key to win the game and keep extensive relationship with the goals of the game, such as: the importance of reading the instructions (25%) good teamwork (21 %), apply logic (12.5%), know the order of an audit (12.5%) and a sound analysis (12.5%).

Table II. Strategy to win the game

Calificación	#	Frec. %
Leer bien las instrucciones	6	25.0
Trabajo en equipo	5	20.8
La lógica	3	12.5
El orden para realizar una auditoría	3	12.5
Análisis profundo	3	12.5
Planificación	1	4.2
Leer bien la información de la auditoría	1	4.2
Relacionar bien la información	1	4.2
Relacionar los conceptos	1	4.2
Armar las figuras de atrás y luego buscar la lógica	1	4.2
Tener claridad de la información de la empresa	1	4.2
Tener conocimientos previos	1	4.2
	24	

IV. conclusions

The possibility that players go through a process of intra and intergroup communication requires developing skills like taking a logical order, to associate and connect information, and improve the ability of analysis -elements vital for administrative and managerial training of students. In addition, the importance of reading the instructions carefully, teamwork, apply logic, have a brief knowledge of the subject and conduct a thorough analysis are tasks that players considered key to winning the game and keep extensive relationship with its objectives.

In the literature review it became clear that the use of management games in the area of marketing audit is emerging, allowing submit a management game focused on this area of training, which facilitates the student measure indicators performance process marketing, resulting in opportunities to strengthen learning strategies in the classroom.

The game MKnow Audit management complements the learning process of marketing audit that dynamically evaluates its four characteristics: comprehensive, independent, systematic and regular.

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